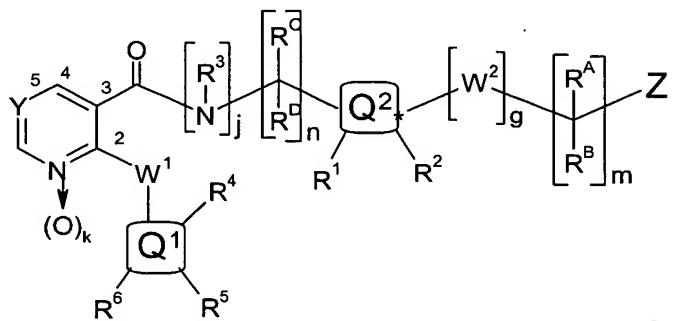
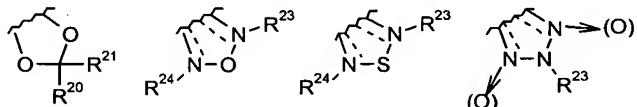


## **ABSTRACT OF THE DISCLOSURE**

Compounds useful as inhibitors of PDE4 in the treatment of diseases regulated by the activation and degranulation of eosinophils, especially asthma, chronic bronchitis, and chronic obstructive pulmonary disease, of the formula:



where  $j$  is 0 or 1 provided that when  $j$  is 0,  $n$  must be 2;  $k$  is 0 or 1;  $m$  is 0, 1, or 2;  $n$  is 1 or 2;  $W^1$  is  $—O—$ ; or  $—S(=O)_t—$ , where  $t$  is 0, 1, or 2; or  $—N(R^3)—$ ;  $W^2$  is  $—O—CR^A R^B—$  or is absent;  $Y$  is  $=C(R^1_a)—$  or  $—[N \Rightarrow (O)_k]—$  where  $k$  is 0 or 1;  $R^A$  and  $R^B$  are  $—H$ ;  $—F$ ;  $—CF_3$ ;  $—(C_1-C_4)$  alkyl;  $—(C_3-C_7)$  cycloalkyl; phenyl; or benzyl substituted with 0 to 3 substituents  $R^{10}$ ; or  $R^A$  and  $R^B$  are taken together, but only in the case where  $m$  is 1, to form a spiro moiety;  $R^C$  and  $R^D$  have the same meaning as  $R^A$  and  $R^B$  except that one of them must be  $-H$ ,  $R^1$  and  $R^2$  are  $—H$ ;  $—F$ ;  $—Cl$ ;  $—CN$ ;  $—NO_2$ ;  $—(C_1-C_4)$  alkyl;  $—(C_2-C_4)$  alkynyl; fluorinated— $(C_1-C_3)$  alkyl;  $—OR^{16}$ ; and  $-C(=O)NR^{22}_a R^{22}_b$ ;  $R^3$  is  $—H$ ;  $—(C_1-C_3)$  alkyl; phenyl; benzyl; or  $—OR^{16}$ ;  $R^4$ ,  $R^5$  and  $R^6$  in addition to other meanings may be taken together to form, e.g.,



$Q^1$  is a saturated or unsaturated carbon ring system that is a 3- to 7-membered monocyclic, or that is a 7- to 12-membered, fused polycyclic; provided that  $Q^1$  is not a discontinuous or restricted biaryl moiety as defined under  $Q^2$ ; where optionally one carbon atom may be replaced by a heteroatom selected from N, O, and S; where optionally a second carbon atom thereof, and further optionally a third carbon atom thereof may be replaced by N;  $Q^2$  is a discontinuous or restricted biaryl moiety consisting of a saturated or unsaturated carbon ring system that is a 3- to 7-membered monocyclic, or that is a 7- to 12-membered, fused polycyclic; where optionally one carbon atom may be replaced by a heteroatom selected from N, O, and S; where optionally a second carbon atom thereof, and further optionally a third carbon atom thereof may be replaced by N; Z is selected from:

